Thriving amidst uncertainty: a financial blueprint for the public budget

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Abstract

This research explores strategies for thriving amidst uncertainty through a financial blueprint for public budgets, focusing on key factors like budgetary resilience (BR), stability (BS), sustainability (BSu), empowerment (BE), preparedness (BP), governance (BG), inclusion priorities (BIP), and agility (BA). Analysing data from 1,200 respondents and audited financial reports for 2023/24, statistical methods such as exploratory and confirmatory factorial analysis, and Cronbach's Alpha were used to assess relationships among these factors. Results highlight BR's role in economic development, while BS and BSu enhance financial stability and reduce debt. BE fosters employment and social stability, emphasizing robust planning. BP ensures accurate management in uncertain conditions, and BG reduces corruption and strengthens accountability. These insights offer valuable guidance for policymakers and financial managers aiming to enhance public budget stability and sustainability.

Keywords: public budget, financial blueprint, uncertainty, public finance, financial reports

1 INTRODUCTION

In today's unprecedented era of uncertainty, effective financial management within public budgets is more crucial than ever. This research aims to address this need by presenting a comprehensive financial blueprint specifically designed to navigate uncertainty effectively. Drawing upon factors identified in this study – such as budgetary resilience (BR), budgetary stability (BS), budgetary sustainability (BSu), budgetary empowerment (BE), budgetary preparedness (BP), budgetary governance (BG), budgetary inclusion priorities (BIP), and budgetary agility (BA) – this blueprint serves as a guide not only for uncertain times but also for the ability to thrive amidst them.

By meticulously examining the interplay between these factors, this study aims to uncover statistically significant relationships that elucidate their impact on sustainability and the financial blueprint for the public budget. Akroyd and Kober (2020) highlight the importance of personal control and control of results, further supported by control over personnel, results, and budget actions, which is crucial for thriving amidst uncertainty, particularly in managing public budgets. Chao, Yu and Yu (2009) indicate that adjustments in public sector wages and capital tax rates have welfare implications. Marchewka-Bartkowiak (2023) emphasizes the expected significant increase in budgetary needs for climate financing in the coming years and decades. Meanwhile, Lappi and Aaltonen (2017) suggest that agile projects create tensions in governance within the public sector and technology.

In summary, this research introduces a comprehensive financial blueprint tailored to address the challenges posed by uncertainty within public budgets. Unlike previous literature, which often focuses on individual aspects of financial management, this blueprint considers multiple factors – BR, BS, BSu, BE, BP, BG, BIP, and BA – in an integrated manner. The objective of this article is to provide a thorough understanding of how these factors interact and influence each other within the financial blueprint, thereby shaping effective financial strategies amidst uncertainty.

To achieve this objective, the research questions guide the inquiry. Firstly, the study aims to understand how these factors interact and influence each other within the financial blueprint. Secondly, it investigates the significance of each factor in shaping effective financial blueprint strategies amidst uncertainty. Furthermore, this study examines the gap in the existing literature regarding the comprehensive integration of various factors within a financial blueprint for public budgets amidst uncertainty, crucial for policymakers and budget managers in developing more effective strategies for navigating uncertain financial terrain.

2 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

In the intricate realm of public finance, the imperative for governmental bodies to excel amid uncertainty is increasingly apparent. With fiscal environments in constant flux, characterized by unforeseen economic shifts, global crises, and evolving societal needs, the creation of a resilient financial blueprint becomes imperative. This literature review embarks on an exploration of the multifaceted dimensions of budgetary resilience (BR), stability (BS), sustainability (BSu), empowerment (BE), preparedness (BP), governance (BG), inclusion priorities (BIP), and agility (BU). Its primary aim is to identify existing gaps in research and develop hypotheses based on the interplay of these factors. Through this comprehensive examination, the review seeks to elucidate pathways toward enhanced fiscal fortitude and effective resource allocation strategies, thus ensuring the vitality and prosperity of public budgets amidst uncertainty.

2.1 BUDGETARY RESILIENCE

Within the framework of the financial blueprint for the public budget, budgetary resilience (BR) emerges as a pivotal factor in navigating uncertainty within public budgets. A well-prepared budget not only contributes actively to economic development but also facilitates increased public investment and improves the quality of public services in uncertain times. This assertion finds support in the work of Bracci and Tallaki (2021), who observe that financial shocks often prompt investments in management control systems, reinforcing or developing anticipatory and coping capacities. Similarly, Farhana and Siti-Nabiha (2023) underscore that perceived uncertainties typically influence budget responses. Moreover, Dzigbede, Pathak and Muzata (2023) point out that countries with more reliable budget processes and transparent public finances tend to exhibit higher estimates of economic recovery and resilience, thereby bolstering long-term budget resilience and fostering economic growth.

2.2 BUDGETARY STABILITY

Amidst the realm of public finance, budgetary stability (BS) plays a critical role in ensuring financial resilience, bolstering citizens' confidence, and effectively managing financial crises. Raudla and Douglas (2020) highlight the importance of budget stability in mitigating fiscal crises, often leading to tighter control and reduced budgetary flexibility. Expanding on this idea, Rugina (1997) highlights the collaborative efforts of government bodies in budget preparation, promoting economic, monetary, and financial stability, alongside enhancing citizens' trust in budget management. Additionally, Akosah (2015) underscores the adverse effects of unstable fiscal policies on fiscal stability, particularly evident during periods of uncertainty.

2.3 BUDGETARY SUSTAINABILITY

In the sphere of budgetary sustainability (BSu) and its associated variables, a well-prepared budget serves to minimize financial risks, aid in the reduction of public debt, and contribute to poverty alleviation. Additionally, studies underscore the positive relationship between budget transparency and the financial sustainability of governments, extending beyond conventional aims to enhance citizen trust and participation, as demonstrated by Cuadrado-Ballesteros and Bisogno (2022). Moreover, it is emphasized that participatory budgeting, as a facet of sustainable governance, necessitates a financially and administratively stable organizational process for its institutionalization, as highlighted by Sinervo et al. (2024). These insights align with the research aim of investigating the interplay among various budgetary factors and their influence on effective financial blueprint strategies for public budgets amidst uncertainty.

2.4 BUDGETARY EMPOWERMENT

Amidst the realm of public finance, budgetary empowerment (BE) plays a crucial role, with associated variables indicating that a well-prepared public budget not only enhances employment opportunities but also fosters social sustainability and improves the transparency of public finances. Abuamsha and Hattab (2024) point out that strategies such as promoting investment projects, reducing taxes on essential goods, and supporting local producers can effectively lower unemployment rates and stimulate economic growth. Additionally, Uddin (2019) underscores the importance of people's participation in the budgeting process, particularly at the local government level, to enhance budgetary empowerment. These insights align with the intention of investigating the interplay among various budgetary factors and their influence on effective financial blueprint strategies for the public budget amidst uncertainty.

2.5 BUDGETARY PREPAREDNESS

In the context of budgetary preparedness (BP) and its associated variables, the effectiveness of a clear and well-prepared financial plan in managing public budgets and alleviating the impacts of budget uncertainty is paramount. Mancini and Tommasino (2023) highlight the tendency of some public administrations to overestimate capital expenditure, emphasizing the need for a defined threshold to enhance accuracy in line with their plans. This not only aids in improving precision but also serves to mitigate the effects of uncertainty through the implementation of a meticulously crafted financial blueprint. Similarly, Charoenwong et al. (2024) underscore the significance of acknowledging the impact of uncertainty on investment dynamics within canonical models. They elucidate the notion of "time to build" in investment decisions, underscoring how uncertainty can detrimentally affect capital values and productivity within the realm of public budgeting. These insights align to investigate the interplay among various budgetary factors and their influence on effective financial blueprint strategies for the public budget amidst uncertainty.

2.6 BUDGETARY GOVERNANCE

Amidst considerations of financial stability amidst uncertainty, budgetary governance (BG) and its associated variables emerge as pivotal components. A well-prepared budget not only acts as a deterrent to corruption but also bolsters the financial accountability of public institutions, enhances accountability to citizens, mitigates wealth inequality, fosters environmental sustainability, boosts citizen participation in financial decision-making, advocates for social justice, and diminishes income inequality. Moreover, it necessitates mechanisms for monitoring and evaluating budget implementation. As highlighted by Lulaj and Dragusha (2022), a meticulous approach to tax collection from citizens and businesses is imperative to augment budget revenues, while prudent expense management is essential, especially during periods of uncertainty such as pandemics (Lulaj, 2022). Ozdemir, Reed Johnson and Whittington (2016) underscores the importance of calculating changes in well-being based on program preferences within special budget portfolios, particularly in uncertain times. These insights underscore the complexity of budgetary governance and its multifaceted implications, contributing to a broader discussion on effective financial blueprint strategies for the public budget amidst uncertainty.

2.7 BUDGETARY INCLUSION PRIORITIES

Amidst the discussion on effective financial strategies amidst uncertainty, budgetary inclusion priorities (BIP) and its associated variables emerge as crucial considerations. Fair distribution, which promotes gender equality and fosters long-term economic development, is paramount. Additionally, providing opportunities for public consultation during the budget process enhances transparency and accountability. Lulaj, Zarin and Rahman (2022) emphasize that program selection should be based on priorities rather than wishes and politics, ensuring effective resource allocation. These insights underscore the importance of considering inclusion priorities within the broader context of financial planning and strategy, contributing to discussions on navigating uncertainty in public budgets.

2.8 BUDGETARY AGILITY

Amidst discussions on navigating uncertainty in public budgets, budgetary agility (BA) and its associated variables become crucial considerations. Budget updates, addressing various budget needs, and effective communication are highlighted as essential aspects by Pedersen (2018). Ciric Lalic et al. (2022) emphasize that reducing challenges and providing support for the development of skills for overcoming obstacles can ease transformations and enhance the agile approach within the financial blueprint, particularly in times of uncertainty. These insights underscore the importance of considering budgetary agility within the broader context of financial planning and strategy, contributing to discussions on effective resource management amidst uncertainty.

2.9 DEVELOPMENT AND CONSTRUCTION OF HYPOTHESES

In the context of thriving amidst uncertainty within the financial blueprint for the public budget, a synthesis of existing literature provides a robust foundation for constructing hypotheses. These hypotheses elucidate the interconnectedness of budgetary factors, including budgetary resilience (BR), stability (BS), sustainability (BSu), empowerment (BE), preparedness (BP), governance (BG), inclusion priorities (BIP), and agility (BA), and their pivotal role in shaping effective financial blueprint strategies amidst uncer-

tainty. From this point of view, Valle-Cruz, Fernandez-Cortez and Gil-Garcia (2022) highlight the transformative potential of artificial intelligence in optimizing governmental budget allocations, emphasizing its capacity to bolster GDP growth, mitigate inflation, and address income inequality. Furthermore, Neaime's (2015) warning about potential fiscal crises in certain European Union nations underscores the imperative of fiscal prudence and forward-thinking budgetary management practices.

Moreover, Bom and Ligthart (2024) advocate for strategic investments in public infrastructure within the balanced budget framework, citing its dynamic macroeconomic ramifications. Anessi-Pessina et al. (2020) stress the predictive and adaptive functions of budgeting, positioning it as a crucial tool for enhancing government resilience in the face of unforeseen shocks. Grossi and Argento (2022) shed light on the evolving landscape of public governance towards more collaborative and digitally-driven frameworks, necessitating a re-evaluation of budgetary practices and accountability mechanisms. Papenfuß, Saliterer and Albrecht (2017) underscore the importance of local government resilience amidst uncertainty, advocating for the formulation of robust financial blueprints to navigate crises effectively. The need for financial reforms is critical to safeguard funds and address rising budget challenges, as noted by Lulaj (2021). Additionally, Lulaj et al. (2022) emphasize that the emergence of new information and communication technologies has significantly accelerated the transition to e-government. Furthermore, Mauro, Cinquini and Sinervo (2019) highlight the challenges stemming from fragmented stakeholder engagement in harnessing budgetary information for improved performance. Zhang et al. (2022) and Kumar et al. (2024) emphasize the transformative potential of financial technology and digital finance, respectively, in reshaping budgetary dynamics and citizen engagement paradigms.

In summary, a synthesis of the literature provides a comprehensive foundation for formulating hypotheses that explore the intricate relationship between budgetary factors and the part they have to play incrafting effective financial blueprint strategies amidst uncertainty. Drawing upon insights from various scholars, the following hypotheses are proposed:

Hypothesis 1: There is a statistically significant and positive relationship among the budgetary factors.

Hypothesis 2: The budgetary factors significantly shape effective financial blueprint strategies for the public budget amidst uncertainty.

H1 is supported by Valle-Cruz, Fernandez-Cortez and Gil-Garcia (2022) who emphasize the transformative potential of artificial intelligence in optimizing governmental budget allocations, and by Anessi-Pessina et al. (2020) who highlight the predictive and adaptive functions of budgeting, positioning it as a crucial tool for enhancing government resilience in the face of unforeseen shocks. Furthermore, H2 finds support in the arguments put forward by Bom and Ligthart (2024) advocating for strategic investment in public infrastructure within balanced budget frameworks, as well as by Grossi and Argento (2022) who shed light on the landscape of public governance, evolving towards more collaborative and digitally-driven frameworks, necessitating a re-evaluation of budgetary practices and accountability mechanisms. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are crucial for developing hypotheses H1

and H2, which examine the relationships between different factors: BR, BE, BP, BG, BSu, BS, BIP, and BA. Specifically, these hypotheses examine relationships such as: BR<-->BE; BR<-->BP; BR<-->BG; BR<-->BSu; BS<-->BE; BS<-->BIP; BS<-->BP; BS<-->BSu; BE<--> BIP; BE<-->BP; BE<-->BG; BE<-->BSu; BE<-->BA; BIP<-->BP; BIP<-->BG; BIP<-->BSu; BP<-->BG; BP<-->BSu; BP<--> BA; BG<-->BSu; BG <-->BA; BSu<-->BA; BR<-->BS; BS<--> BA, within the context of the financial blueprint for public budgeting. The primary objective of H1 and H2 is to analyze these interrelationships to enhance the performance and transparency of public funds. This can be achieved by implementing a robust financial blueprint for public budgeting. In summary, these hypotheses draw on a combination of empirical evidence and theoretical frameworks from diverse scholarly sources. This provides a structured methodology for understanding the dynamics between budgetary factors and developing effective financial strategies in uncertain environments.

3 MATERIALS AND METHODS

3.1 THE PURPOSE OF THE PAPER
The research focuses on thriving amidst uncertainty through a financial blueprint for the public budget using factors such as budgetary resilience (BR), budgetary stability (BS), budgetary sustainability (BSu), budgetary empowerment (BE), budgetary preparedness (BP), budgetary governance (BG), budgetary inclusion priorities (BIP), budgetary agility (BA). The intention is to explore and identify statistically significant relationships between factors to assess their impact on sustainability and financial performance, ultimately contributing to a better understanding of how effective financial management strategies can be developed for the public budget in uncertain times. The findings will empower policymakers and stakeholders by providing actionable insights to navigate unpredictable circumstances, ensuring an inclusive, responsive, and sustainable budget.

3.2 DATA COLLECTION
The study employed a dual methodology to collect data in the State of Kosovo. First, responses were gathered from 1,200 participants using a Likert scale questionnaire (ranging from 1 – strongly disagree to 5 – strongly agree). Second, audited financial-budgetary reports from both local municipalities and the central Budget Department (Ministry of Finance, Labor, and Transfers) for the 2023-2024 period were analysed. This secondary data played a key role in enriching the questionnaire by providing essential insights into the financial dynamics at both local and central levels.

All participants were willing to contribute to the understanding of the importance of public finances, the budget, and the role of public money in times of uncertainty. The sampling unit consisted of individual respondents from selected municipalities in Kosovo, with the sampling frame being the population lists from the municipalities of Peja, Gjakova, Prizren, Prishtina, Deçan, Junik, Klinë, Malishevë, Ferizaj, and Gjilan. To ensure representation from different municipalities and demographic groups, the sampling design employed was stratified random sampling. The number of respondents was distributed as follows: Peja (231 respondents), Gjakova (90), Prizren (111), Prishtina (200), Deçan (89), Junik (70), Klinë (109), Malishevë (50), Ferizaj (150), and Gjilan

(100). The survey was conducted within the geopolitical boundaries of these municipalities in Kosovo, providing a comprehensive understanding of budgetary factors in different regions of the country.

Among the respondents, 30.2% were male, 60.4% were female, and 2.1% preferred not to specify their gender. The age distribution was 65.7% for those aged 15-35 years, 20.5% for those aged 36-55 years, and 6.4% for those over 55 years. Regarding education, 1.7% had completed high school, 29.5% had undergraduate degrees, 56.5% had postgraduate degrees, and 4.9% had other degrees (Ph.D.). A table of the descriptive analysis of the respondents is presented in the table A3.

TABLE 1

Definition and description of the study variables

Item	Construct	Source
Factor 1 **Budgetary resilience (BR)**		
BR1	Uncertainty is a major challenge for the public budget	Upadhaya et al. (2020) Farhana and Siti-Nabiha (2023) Agyemang et al. (2023)
BR2	A sustainable public budget protects the economy from negative effects	
BR3	A well-prepared public budget contributes to economic development	
BR4	A well-prepared public budget can increase public investment	
BR5	A well-prepared public budget improves the quality of public services	
Factor 2 **Budgetary stability (BS)**		
BS1	A well-prepared public budget contributes to financial stability	Mauro, Cinquini and Sinervo (2019) Lulaj (2024)
BS2	A well-prepared budget based on a clear financial plan increases citizen confidence	
BS3	A well-prepared public budget helps to manage financial crises	
Factor 3 **Budgetary sustainability (BSu)**		
BSu1	A well-prepared budget plan minimizes financial risks	Giosi et al. (2014)
BSu2	A well-prepared public budget helps to reduce public debt	
BSu3	A well-prepared public budget contributes to poverty reduction	
Factor 4 **Budgetary empowerment (BE)**		
BE1	Employment opportunities are enhanced by a well-prepared public budget	Reddick (2004)
BE2	Social sustainability can be achieved through a well-prepared public budget	
BE3	A well-prepared public budget improves the transparency of public finances	
Factor 5 **Budgetary preparedness (BP)**		
BE1	A clear financial plan is useful in managing the public budget	Agyemang et al. (2023)
BE2	A well-prepared financial plan can mitigate the effects of budget uncertainty	

Factor 6 Budgetary governance (BG)		
BG1	A well-prepared public budget helps to reduce corruption	
BG2	A well-prepared public budget increases the financial accountability of public institutions	
BG3	A well-prepared public budget increases accountability to citizens	Lulaj (2019a) Kasperskaya and Xifré (2020) Drew (2017)
BG4	A well-prepared public budget helps to reduce wealth inequality	
BG5	A well-prepared public budget promotes environmental sustainability	
BG6	A well-prepared public budget increases citizen participation in financial decision-making	
BG7	A well-prepared public budget promotes social justice	
BG8	A well-prepared public budget reduces income inequality	
BG9	Mechanisms for monitoring and evaluating the implementation of the public budget are necessary	
Factor 7 Budgetary inclusion priorities (BIP)		
BIP1	Necessity of public budget allocation for programs promoting gender equality	Looney (1987)
BIP2	The belief that public investment should prioritize long-term economic development	
BIP3	Public consultation plays a crucial role in the process of public budgeting	
Factor 8 Budgetary agility (BA)		
BA1	Satisfaction with the frequency of updates on the implementation of the public budget	Barbera, Guarini and Steccolini (2020) Lappi and Aaltonen, (2017) Palsodkar, Yadav and Nagare (2023)
BA2	Satisfaction with the inclusiveness of the public budget in addressing diverse community needs	
BA3	Satisfaction with government responsiveness to public input during the budget process	
BA4	Information about services and programs funded by the public budget is easily accessible	
BA5	The government effectively communicates budget decisions to the public	
BA6	The government can meet future fiscal challenges	

Source: Author's own calculations.

Table 1 describes the variables examined in this study, which highlight the importance of factors such as budgetary resilience (BR), budgetary stability (BS), budgetary sustainability (BSu), budgetary empowerment (BE), budgetary preparedness (BP), budgetary governance (BG), budgetary inclusion priorities (BIP), and budgetary agile (BA) in thriving under uncertainty through a financial blueprint for the public budget. The analysis included three variables for the BS, BSu, BE and BIP factors, two variables for the BP factor, five variables for the BR factor, nine variables for the BG factor, and six variables for the BA factor. Variables that were not found to

be significant were excluded from the model and the factors. In the introduction and literature review section of the study, each factor and its variables are discussed in detail, taking into account the contributions of different authors. The results and discussion section analyses the findings of this research for each factor and compares them with the findings of other authors.

3.3 DATA ANALYSIS
To thoroughly assess the model's significance and validate the hypotheses, rigorous data analysis was conducted using SPSS and AMOS software. This involved a series of tests including exploratory factor analysis (EFA), reliability analysis (Cronbach's Alpha), and confirmatory factor analysis (CFA). The econometric model was visually depicted for enhanced comprehension. Exploratory factor analysis (EFA), widely acknowledged across various disciplines, particularly economics, was initially utilized to scrutinize data, as emphasized by Spearman (1904, 1927). Subsequently, reliability analysis and associated tests were conducted, aligning with Floyd and Widaman's (1995) framework, which underscores the pivotal role of factorial analysis in assessing questionnaire instruments across multiple factors. Confirmatory factor analysis (CFA) followed, employing standardized regression (β) to elucidate the model's specified factors (BR, BS, BSu, BE, BP, BG, BIP, and BA). Multiple regression, as outlined by Cohen et al. (2003), played a pivotal role in this analysis. Lastly, covariance, correlation analysis, and model fit assessments were employed to rigorously test the hypotheses, ensuring robustness and validity in the findings.

4 EMPIRICAL RESULTS AND DISCUSSION
In navigating the intricacies of public budgeting, the concept of thriving amidst uncertainty emerges as paramount. The analysis, grounded in factors such as budgetary resilience (BR), stability (BS), sustainability (BSu), empowerment (BE), preparedness (BP), governance (BG), inclusion priorities (BIP), and agility (BU), underscores the necessity for a comprehensive financial blueprint. As the findings unfold in the following discussion, they will interact with insights from other scholars, offering a dynamic exchange that enhances understanding of effective budgetary management through the financial blueprint. Therefore, according to Mihaljek (2023), it is emphasised that recently public finances and inflation have been intensively discussed as common topics of economic research and policy analysis.

Regarding the budget in times of uncertainty and to support it through the financial blueprint, as for Christl et al. (2023) it is emphasised that macro trends will increase the pressure on government budgets; however, it is also shown that the current tax-benefit systems have the capacity to counterbalance rising income inequality and poverty risks caused by expected future developments in labour markets (Blank, Van Heezik and Blank, 2023). It is emphasised that the central government aims to improve efficiency and promote technological advancement within public organisations. However, certain local administrations allocate dedicated funds to support participatory budgeting initiatives, as emphasized by Sońta (2023). According to Lulaj (2019b) and Lulaj and Muthmainnah (2021), a transparent budget provides citizens with access to

information, allowing them to comment on the government's revenues, allocations, and expenditures. However, if the budget is not transparent, accessible, or accurate, it cannot be properly analysed.

In Velkovska and Trenovski (2023), it is emphasised that the economy has a greater impact on reducing poverty than social spending, while social spending has a greater impact on reducing income inequality than economic growth. Regarding the factors of this research (BR, BS, BSu, BE, BP, BG, BIP and BA), Brezovar and Stanimirović (2022) emphasize that, in alignment with the municipal social sustainability agenda, the financial plan plays a crucial role in promoting not only equality and diversity but also coexistence, social cohesion, democracy, governance, and overall quality of life within the municipality. This interconnected approach ensures that social aspects are integrated with economic and governance frameworks, enhancing the municipality's overall sustainability. Moreover, Barbera, Borgonovi and Steccolini (2016) identify four key aspects of popular reporting that play a central role in strengthening governance. These aspects include the ability to ensure greater transparency, maintain neutrality, enhance participation, and increase influence in the decision-making process. Meanwhile, in Alsharari (2020), it is emphasised that the new budgeting systems are implemented based on the review of theoretical accountability procedures and the audit of public sector accounts (Işik and Koç, 2021). In Wällstedt and Almqvist (2017) and Barbera (2017) it is emphasised that in times of uncertainty, financial shocks for municipalities can be overcome relatively easily if they have a stable and resilient financial blueprint. On the basis of the discussions of the different authors on all the factors, the results of this research will be elaborated below for all the factors and their variables, helping to draw conclusions and recommendations for states, governments, institutions and all actors involved in the public budget.

TABLE 2
Confirmatory factorial analysis (CFA)

Observed variable	Latent variable	Standardized regression weights	Estimate	S.E.	C.R.	p-value	Confidence level
BR1	BR	0.597***	1.000				Statistically significant
BR2	BR	0.561***	0.914	0.061	15.104	p < 0.001	Statistically significant
BR3	BR	0.734***	1.335	0.074	17.972	p < 0.001	Statistically significant
BR4	BR	0.569***	1.005	0.066	15.266	p < 0.001	Statistically significant
BR5	BR	0.509***	0.945	0.067	14.027	p < 0.001	Statistically significant
BS1	BS	0.707***	1.000				Statistically significant
BS2	BS	0.714***	1.436	0.075	19.082	p < 0.001	Statistically significant
BS3	BS	0.633***	0.869	0.049	17.680	p < 0.001	Statistically significant
BSu1	BSu	0.580***	1.000				Statistically significant
BSu2	BSu	0.649***	1.021	0.063	16.238	p < 0.001	Statistically significant
BSu3	BSu	0.618***	1.071	0.068	15.749	p < 0.001	Statistically significant
BE1	BE	0.641***	1.000				Statistically significant
BE2	BE	0.604***	0.969	0.062	15.533	p < 0.001	Statistically significant
BE3	BE	0.503***	0.782	0.058	13.576	p < 0.001	Statistically significant
BP1	BP	0.559***	1.000				Statistically significant
BP2	BP	0.548***	0.921	0.068	13.586	p < 0.001	Statistically significant
BG1	BG	0.632***	1.000				Statistically significant
BG2	BG	0.500***	0.658	0.045	14.748	p < 0.001	Statistically significant
BG3	BG	0.579***	0.939	0.056	16.670	p < 0.001	Statistically significant
BG4	BG	0.580***	0.834	0.050	16.683	p < 0.001	Statistically significant
BG5	BG	0.658***	0.945	0.051	18.431	p < 0.001	Statistically significant
BG6	BG	0.624***	1.071	0.061	17.695	p < 0.001	Statistically significant
BG7	BG	0.555***	0.765	0.047	16.099	p < 0.001	Statistically significant
BG8	BG	0.619***	1.122	0.064	17.581	p < 0.001	Statistically significant

Observed variable	Latent variable	Standardized regression weights	Estimate	S.E.	C.R.	p-value	Confidence level
BG9	BG	0.672***	0.934	0.050	18.728	p < 0.001	Statistically significant
BIP1	BIP	0.541***	1.000				Statistically significant
BIP2	BIP	0.543***	1.016	0.079	12.792	p < 0.001	Statistically significant
BIP3	BIP	0.614***	1.115	0.081	13.678	p < 0.001	Statistically significant
BA1	BA	0.581***	1.000				Statistically significant
BA2	BA	0.514***	0.896	0.065	13.799	p < 0.001	Statistically significant
BA3	BA	0.587***	1.048	0.069	15.173	p < 0.001	Statistically significant
BA4	BA	0.630***	1.070	0.067	15.902	p < 0.001	Statistically significant
BA5	BA	0.514***	0.878	0.064	13.814	p < 0.001	Statistically significant
BA6	BA	0.592***	1.011	0.066	15.273	p < 0.001	Statistically significant

Note: Standard error (S.E.), Critical ratios (C.R.), *** p<0.001 indicates statistical significance. The confidence interval is set at 99.9% (CI).

Source: Author's own calculations.

Table 2 presents the outcomes of the confirmatory factor analysis (CFA) concerning thriving amidst uncertainty through a financial blueprint for public budgeting across various factors: BR, BS, BSu, BE, BP, BIP, and BA. Each observable variable – BR (1-5), BS (1-3), BSu (1-3), BE (1-3), BP (1-2), BG (1-9), BIP (1-3), and BA (1-6) – can be seen to have a significant and statistically reliable influence on the latent variables (BR, BS, BSu, BE, BP, BIP, and BA), following Bollen (1989). The analysis underscores the statistical significance of all factor variables, with standardized regression weights surpassing 0.5 at a significance level of $p < 0.001$ (***).

Regarding the BR factor, the variable BR3 (0.734***) signifies that a well-prepared budget by governing bodies contributes substantially to a country's economic development. In the BS factor, BS1 (0.707***) and BS2 (0.714***) emphasize the importance of a well-prepared public budget with a clear financial plan, enhancing citizen confidence and financial stability. In the BSu factor, BSu2 (0.649***) and BSu3 (0.618***) hold the greatest significance, indicating that a well-prepared public budget aids in reducing public debt and poverty through proper allocation of expenses based on national interests. Moving to the BE factor, BE1 (0.641***) and BE2 (0.604***) show that a well-prepared public budget leads to increased employment opportunities, social stability, and citizen well-being. In the BP factor, BP1 (0.559***) and BP2 (0.548***) stress the importance of clear, effective, and well-prepared financial plans by governing bodies in managing the public budget accurately and mitigating budget uncertainty.

Within the BG factor, BG9 (0.672***) and BG5 (0.658***) signify the importance of monitoring and evaluating mechanisms for public budget implementation, promoting environmental sustainability when budgets are well-prepared. Concerning the BIP factor, BIP3 (0.614***) underscores the crucial role of public consultations in enhancing budget transparency, performance, and economic-financial development.

Lastly, in the BA factor, BA4 (0.630***), BA6 (0.592***), BA3 (0.587***), and BA1 (0.581***) highlight the significance of accessible budget information, consideration of citizens' reactions, and timely updates on budget implementation in facing future fiscal challenges effectively. A reliability level of 99.9% confirms the robustness of these results, underlining CFA's vital contribution to countries and institutional management bodies by emphasizing accurate budget allocation from planning to audit, thereby enhancing economic and financial development amidst uncertainty.

TABLE 3

Standardized total effects – two tailed significance

Variable	BA	BSu	BG	BP	BIP	BE	BS	BR
BA6	0.019*							
BA5	0.010**							
BA4	0.003**							
BA3	0.006**							
BA2	0.005**							
BA1	0.020*							
BSu3		0.009**						
BSu2		0.016*						
BSu1		0.018*						
BG9			0.009**					
BG8			0.007**					
BG7			0.010**					
BG6			0.008**					
BG5			0.003**					
BG4			0.007**					
BG3			0.012*					
BG2			0.007**					
BG1			0.006**					
BP1				0.012*				
BP2				0.006*				
BIP3					0.011*			
BIP2					0.010**			
BIP1					0.013*			
BE3						0.003**		
BE2						0.005**		
BE1						0.021*		
BS3							0.013*	
BS2							0.012*	
BS1							0.012*	
BR5								0.011*
BR4								0.015*
BR3								0.008**
BR2								0.007**
BR1								0.003**

*Note: ** p<0.01, * p<0.05.*

Source: Author's own calculations.

Table 3 shows the results of the standardized total effect for all factors (BR, BS, BSu, BE, BP, BG, BIP, and BA) and their variables related to thriving amidst uncertainty through a financial blueprint for the public budget.

As for budgetary agility (BA), all its variables demonstrate significant impacts at either the 1% or 5% levels. This implies that adjusting the frequency of updates on budget implementation, responsiveness to community needs, inclusiveness in government's

response to public input, accessibility of financial information and programs, and effective communication of budget decisions can alter the budgetary agility factor. These findings stress the necessity of employing flexible budgetary practices to enhance government responsiveness and efficiency in budget management.

Moving on to budgetary sustainability (BSu), it is notable that all variables exert significant impacts at the 1% and 5% levels. This highlights how a well-prepared budget plan can mitigate financial risks, lower public debt, and alleviate poverty through enhancing budgetary sustainability. Effective budget planning is pivotal in upholding a nation's financial stability and fostering societal welfare by curbing public debt and poverty.

Regarding budgetary preparedness (BP), all its variables have a significant influence at the 5% level. This shows convincingly that a well-defined and prepared financial plan holds the capacity to effectively manage the public budget and alleviate the repercussions of budgetary uncertainty through modifications in the budgetary preparedness factor. Thorough budget preparation is indispensable for adept public budget management and the mitigation of budget uncertainty risks.

Budgetary governance (BG) emphasizes that all its variables have significant impacts at the 1% and 5% levels. Correct preparation of the budget can reduce corruption, increase financial accountability of public institutions, accountability to citizens, reduce wealth inequality, promote environmental sustainability, citizen participation in financial decision-making, social justice, and income inequality reduction. Good budget preparation is essential for good governance and achieving multiple objectives, including fighting corruption, improving financial and social accountability, reducing inequality, and promoting environmental sustainability.

The budgetary inclusion priorities (BIP) factor underscores the significant impact of its variables at the 1% and 5% levels. Alterations in allocating public budget towards programs promoting gender equality, prioritizing long-term economic development, and incorporating public consultations during budgeting can influence the BIP factor. This highlights the crucial role of policies and budget decisions in shaping overall budgetary policies and meeting BIP objectives.

Budgetary empowerment (BE) emphasizes that each of its variables has considerable significance, notably at the 1% and 5% levels. Enhancing budget preparation not only boosts employment prospects but also fosters social sustainability, enhances public finance transparency, and influences the BE factor. Effective budgetary policies and practices have a profound impact on both economic and social development.

Budgetary stability (BS) indicates that all its variables have a significant impact at the 5% level. Altering the budget preparation process positively contributes to financial stability, bolsters citizen confidence, and aids in managing financial crises. Therefore, a meticulous and effective approach to budget preparation and administration is recommended for fostering positive outcomes for both budget stability and the broader financial system.

Lastly, budgetary resilience (BR) underscores the fact that all its variables exert a significant impact at the 1% and 5% levels. This indicates that a well-prepared budget shields the economy from adverse effects, fosters economic development, bolsters public investments, enhances public service quality, and diminishes uncertainty. Robust budget preparation plays a pivotal role in safeguarding against economic uncertainties and challenges while enhancing public service quality and stimulating investments.

TABLE 4
Model fit summary

Tests/ Parameters	Default model	Tests clarification & equations	Threshold values	Interpretation
		CMIN		
CMIN (χ2) $\alpha=.05$	71.862	$(N - 1)_{FML}$ where $_{FML}$ is the value of the statistical criterion (fit function) minimized in ML estimation and $(N - 1)$ Minimum discrepancy function by degrees of freedom divided (Steiger and Lind, 1980) $$\chi^2 - \chi'^2 = \sum_{i=1}^{k} \frac{\chi_i^2}{m_i} - \sum_{i=1}^{k} \frac{\chi^2}{m'_i}$$	–	–
df_M **(X2/df)**	28	Degrees of freedom are important for understanding model fit, ≤ 2 = acceptable fit Tabachnick and Fidell (2007)	n/a	n/a
χ^2_M	0.000	p-value Joreskog and Surbom (1996)	<.05	Significant
CMIN/DF	2.567	Chi-square divided by degree of freedom Kline (1998)	Between 1 and 3	Excellent fit
		RMR, GFI		
RMR	0.010	Root mean square residual ≤ 0.05 = acceptable fit Diamantopoulos and Siguaw (2000)	The smaller the RMR value the better	Perfect fit
GFI	0.989	Goodness of fit index A value ≥ 0.9 indicates a reasonable fit (Hu and Bentler, 1998) A value of ≥ 0.95 is considered an excellent fit $$GFI = 1 - \frac{C_{res}}{C_{tot}}$$ where C_{res} and C_{tot}, the residual and total variability in the sample covariance matrix	≤ 1 > 0.80	Good fit
AGFI	0.975	Adjusted goodness of fit index	> 0.80	Good fit
PGFI	0.420	Parsimony goodness of fit index	n/a	n/a

Tests/ Parameters	Default model	Tests clarification & equations	Threshold values	Interpretation
Baseline Comparisons				
NFI	0.974	Normed fit index also referred to as delta 1 A value of 1 shows a perfect fit while models valued < 0.9 can be usually improved substantially (Bentler and Bonett, 1980)	> 0.80	Good fit
RFI	0.949	Relative fit index	>0.70	Good fit
IFI	0.984	Incremental fit index	>0.90	Perfect fit
TLI	0.968	Tucker-Lewis coefficient	0 to 1 >0.90	Perfect fit
CFI	0.984	Comparative fit index A CFI value of ≥ 0.95 is considered an excellent fit for the model $$CFI = 1 - \frac{\chi^2_M - df_M}{\chi^2_B - df_B}$$	>0.95	Excellent fit
Parsimony-Adjusted Measures				
PRATIO	0.509	Parsimony ratio		
PNFI	0.496	Parsimony normed fixed index expressing the result of parsimony adjustment (Mulaik and Brett, 1982) to the Normed fixed index (NFI)	0 to 1 >0.50	Good fit
PCFI	0.501	Parsimony comparative fix index		
NCP				
NCP	43.862	Non-centrality parameter	17.3 – 106.1 CI 90%	Good fit
LO 90	22.582	Lower boundary		
HI 90	72.817	Upper boundary		
FMIN				
FMIN	0.060	Index of model fit		
F0	0.037	Confidence interval	.08 – .53 CI 90%	Good Fit
LO 90	0.019	Lower boundary		
HI 90	0.061	Upper boundary		
RMSEA				
RMSEA (90% CI)	0.036	Root mean square error of approximation values ≤ 0.05 are considered excellent (MacCallum, Browne and Sugawara, 1996) $$RMSEA = \sqrt{\frac{\chi^2_M - df_M}{df_M(N-1)}}$$	<0.06	Excellent fit
LO 90	0.026	Lower boundary	CI 90%	
HI 90	0.047	Upper boundary	CI 90%	
PClose	0.987	Close fit hypothesis Browne and Cudeck (1993)	>0.05	

Note: PClose > 0.05, CFI > 0.95.

Source: Author's own calculations.

Table 4 presents the results of the FIT model, aimed at identifying and evaluating relationships among variables (BR, BS, BSu, BE, BP, BG, BIP, and BA) pertinent to thriving amidst uncertainty through a financial blueprint for the public budget. The model exhibits a chi-squared value (CMIN/χ2) of 71.862 and (X2/df, 28) with a p-value of 0.000 at the 5% level, indicating a strong fit and statistical significance. Performance indices, including RMR (0.010), GFI (0.989), AGFI (0.975), PGFI (0.420), NFI (0.974), RFI (0.949), IFI (0.984), TLI (0.968), PRATIO (0.509), PNFI (0.496), and PCFI (0.501), collectively suggest a high level of fit. The RMSEA index of 0.0036 further supports this conclusion. These findings imply that the model aligns well with the available data structure, suggesting significant relationships and interactions among factors when testing alternative hypotheses.

Table 5 provides insights into future research implications derived from verifying the hypothesis. The hypothesis confirmed statistically significant and positive relationships among various budgetary factors, highlighting their importance in enhancing public budget conditions. Factors such as budgetary resilience, budgetary empowerment, budgetary preparedness and budgetary sustainability exhibited strong and positive correlations, underlining their significance. Conversely, weaker correlations were observed for budgetary stability and budgetary governance, suggesting a need for improvements in these areas to maintain stability and effective governance.

Examining both positive and negative relationships among different budgetary elements lays the groundwork for crafting future budget policies and strategies aimed at enhancing resilience, accountability, sustainability, and efficiency in public budget management. Emphasizing the improvement of these connections in future endeavours can foster a more robust network of positive interactions among diverse budgetary factors.

The acceptance of Hypothesis 1, indicating a statistically significant and positive relationship among budgetary factors, suggests a coherent model fit, supported by various statistical tests such as confirmatory factor analysis (CFA), exploratory factor analysis (EFA), and measures like composite reliability (C.I.), Cronbach's alpha (α), and lambda (λ), all indicating a strong model fit.

The findings from table 5 have substantial implications for future research and policy development. Future studies could explore the nuances of these relationships across different socio-economic contexts. Additionally, investigating the effectiveness of specific interventions aimed at strengthening budgetary resilience, stability, sustainability, and governance would offer valuable insights for policymakers and practitioners. Longitudinal studies tracking the evolution of budgetary factors over time could provide a more comprehensive understanding of their dynamics and impact on public budget management.

In conclusion, the analysis provides valuable directions for future research, emphasizing the importance of strengthening connections between budgetary elements to enhance overall budget conditions and promote effective public budget management.

TABLE 5

Hypothesis testing results

Test type	Description	Results
Hypothesis (H1)	There is a statistically significant and positive relationship among the budgetary factors	Accepted
Model fit tests		
CFA	Confirmatory factor analysis	Significant results
EFA	Exploratory factor analysis	Significant results
C.I	Confidence interval	≈ 99.9%
α	Cronbach alpha	$0.60 \geq \alpha$
λ	Lambda	$0.05 \geq \lambda$
Significance levels		
$p < 0.001$		***
$p < 0.01$		**
$p < 0.05$		*
RMSEA	Root mean square error of approximation	90% CI, p = 0.049
χ^2	Chi-squared	χ^2, p = 0.000
CFI	Comparative fit index	CFI = 96%
Relationships		
BR ↔ BE	Budgetary resilience ↔ Budgetary empowerment	Accepted
BR ↔ BP	Budgetary resilience ↔ Budgetary preparedness	Accepted
BR ↔ BG	Budgetary resilience ↔ Budgetary governance	Accepted
BR ↔ BSu	Budgetary resilience ↔ Budgetary sustainability	Accepted
BS ↔ BE	Budgetary stability ↔ Budgetary empowerment	Accepted
BS ↔ BIP	Budgetary stability ↔ Budgetary inclusion priorities	Accepted
BS ↔ BP	Budgetary stability ↔ Budgetary preparedness	Accepted
BS ↔ BSu	Budgetary stability ↔ Budgetary sustainability	Accepted
BE ↔ BIP	Budgetary empowerment ↔ Budgetary inclusion priorities	Accepted
BE ↔ BP	Budgetary empowerment ↔ Budgetary preparedness	Accepted
BE ↔ BG	Budgetary empowerment ↔ Budgetary governance	Accepted
BE ↔ BSu	Budgetary empowerment ↔ Budgetary sustainability	Accepted
BE ↔ BA	Budgetary empowerment ↔ Budgetary agility	Accepted
BIP ↔ BP	Budgetary inclusion priorities ↔ Budgetary preparedness	Accepted
BIP ↔ BG	Budgetary inclusion priorities ↔ Budgetary governance	Accepted
BIP ↔ BSu	Budgetary inclusion priorities ↔ Budgetary sustainability	Accepted
BP ↔ BG	Budgetary preparedness ↔ Budgetary governance	Partially accepted
BP ↔ BSu	Budgetary preparedness ↔ Budgetary sustainability	Accepted
BP ↔ BA	Budgetary preparedness ↔ Budgetary agility	Accepted
BG ↔ BSu	Budgetary governance ↔ Budgetary sustainability	Partially accepted
BG ↔ BA	Budgetary governance ↔ Budgetary agility	Accepted
BSu ↔ BA	Budgetary sustainability ↔ Budgetary agility	Accepted
BR ↔ BS	Budgetary resilience ↔ Budgetary stability	Accepted
BS ↔ BA	Budgetary stability ↔ Budgetary agility	Accepted
BR ↔ BIP	Budgetary resilience ↔ Budgetary inclusion priorities	Accepted
BIP ↔ BA	Budgetary inclusion priorities ↔ Budgetary agility	Accepted
BS ↔ BG	Budgetary stability ↔ Budgetary governance	Accepted

Note: PClose > 0.05, CFI > 0.95.

Source: Author's own calculations.

TABLE 6
Robustness checks and sensitivity analyses

Parameter estimates (tests of model effects)

Factors	Parameter	B	Std. error	95% Wald confidence interval		Hypothesis test (H2)		
				Lower	Upper	Wald Chi-Square	df	Sig.
BR	(Intercept)	21.820	.0626	21.697	21.943	121364.364	1	0.000
	(Scale)	4.708[a]	.1922	4.346	5.100			
BS	(Intercept)	12.820	.0512	12.720	12.920	62658.178	1	0.000
	(Scale)	3.148[a]	.1285	2.906	3.410			
BSu	(Intercept)	13.140	.0403	13.061	13.219	106412.134	1	0.000
	(Scale)	1.947[a]	.0795	1.797	2.109			
BE	(Intercept)	12.927	.0395	12.849	13.004	107346.480	1	0.000
	(Scale)	1.868[a]	.0763	1.724	2.024			
BP	(Intercept)	8.840	.0265	8.788	8.892	111494.990	1	0.000
	(Scale)	.841[a]	.0343	.776	.911			
BG	(Intercept)	38.580	.1160	38.353	38.807	110592.581	1	0.000
	(Scale)	16.150[a]	.6593	14.908	17.496			
BIP	(Intercept)	13.073	.0379	12.999	13.148	119151.674	1	0.000
	(Scale)	1.721[a]	.0703	1.589	1.865			
BA	(Intercept)	25.933	.0716	25.793	26.074	131108.448	1	0.000
	(Scale)	6.156[a]	.2513	5.682	6.668			
Hypothesis2Model	(Intercept)	147.133	.2618	146.620	147.646	315844.526	1	0.000
	(Scale)	82.249[a]	3.3578	75.924	89.101			

Note: Dependent variable: BR (budgetary resilience), BS (budgetary stability), BSu (budgetary sustainability), BE (budgetary empowerment), BP (budgetary preparedness), BG (budgetary governance), BIP (budgetary inclusion priorities), BA (budgetary agility); Model: (Intercept); [a] Maximum likelihood estimate, Standard error (S.E), Intercept (Int.), Scale parameter (Scale Param.), Wald Chi-square value: Wald X².

Source: Author's own calculations.

Table 6 presents a statistical analysis of how various budgetary factors shape effective financial blueprint strategies for the public budget amidst uncertainty. The factors examined include BR, BS, BSu, BE, BP, BG, BIP, and BA, each evaluated for its baseline impact, statistical significance, and influence variability. Thus, BR significantly influences financial strategies, with an intercept of 21.820 (S.E. 0.0626) and Wald X^2 value of 121364.364 (p<0.000), showing robustness and variability (Scale Param. 4.708).

Similarly, BS significantly shapes strategies, with an intercept of 12.820 (S.E. 0.0512) and Wald X^2 value of 62658.178 (p<0.000), indicating substantial influence and variability (Scale Param. 3.148). Moreover, BSu demonstrates a significant effect, with an intercept of 13.140 (S.E. 0.0403) and Wald X^2 value of 106412.134 (p<0.000), showing variability (Scale Param. 1.947).

Additionally, BE significantly influences strategies, with an intercept of 12.927 (S.E. 0.0395) and Wald X^2 value of 107346.480 (p<0.000), indicating variability (Scale Param. 1.868). Furthermore, BP significantly impacts strategies, with an intercept of 8.840 (S.E. 0.0265) and Wald X^2 value of 111494.990 (p<0.000), suggesting lower variability (Scale Param. 0.841).

Conversely, BG has a significant effect, with an intercept of 38.580 (S.E. 0.1160) and Wald X^2 value of 110592.581 (p<0.000), indicating considerable variability (Scale Param. 16.150). Similarly, BIP significantly shapes strategies, with an intercept of 13.073 (S.E. 0.0379) and Wald X^2 value of 119151.674 (p<0.000), suggesting moderate variability (Scale Param. 1.721).

Likewise, BA significantly influences strategies, with an intercept of 25.933 (S.E. 0.0716) and Wald X^2 value of 131108.448 (p<0.000), indicating variability (Scale Param. 6.156).

Therefore, the model (Hypothesis2Model) confirms the significant combined effect of these factors, with an intercept of 147.133 (S.E. 0.2618) and Wald X^2 value of 315844.526 (p<0.000), suggesting considerable variability (Scale Param. 82.249). This supports Hypothesis 2, emphasizing the critical role of budgetary factors in shaping strategies amid uncertainty.

In summary based on these results it is suggested that policymakers should prioritize budgetary factors such as resilience, stability, and sustainability to ensure effective financial strategies amidst uncertainty. Strategic planning efforts should focus on enhancing empowerment, governance, and inclusion priorities. Allocating resources strategically and implementing robust risk management practices are also crucial. Further research is needed to explore additional factors and long-term impacts, informing ongoing efforts to improve budgetary management and strategy development.

5 CONCLUSIONS AND FUTURE STUDIES

The research delved into the realm of thriving amidst uncertainty by proposing a financial blueprint tailored for the public budget, employing a comprehensive set of factors including budgetary resilience (BR), stability (BS), sustainability (BSu), empowerment (BE), preparedness (BP), governance (BG), inclusion priorities (BIP), and agility (BA). Through meticulous data collection from 1,200 respondents via Likert scale questionnaires and analysis of audited financial and budgetary reports for the years 2023-2024, the study aimed to elucidate the intricate relationships between these factors, thereby contributing to the understanding of effective financial management strategies in uncertain times.

Using advanced statistical techniques, including exploratory and confirmatory factor analysis, the research confirmed the importance of these factors in shaping the performance and sustainability of financial plans. These factors, each had values exceeding 0.50, which signified their pivotal role in navigating uncertainty. Furthermore, the reliability and validity of the model were established through various statistical tests, including Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity test, ensuring the robustness of the analysis. The high reliability demonstrated by Cronbach's Alpha reinforced the consistency of the data across all factors.

Confirmatory factor analysis (CFA) reinforced the significance of these factors, indicating a substantial influence on the overarching constructs. Notably, all factor variables exhibited statistical significance with standardised regression weights above 0.5, confirming their crucial role in the model. The findings underscored the importance of budgetary resilience (BR) in driving economic development, with well-prepared budgets being pivotal for a nation's financial stability and confidence in governance. Additionally, budgetary stability (BS) and budgetary sustainability (BSu) played crucial roles in fostering financial stability, reducing public debt, and mitigating poverty through prudent budget planning and allocation.

Budgetary empowerment (BE) emerged as a key determinant of employment opportunities, and social stability, emphasising the need for robust budget preparation to achieve societal well-being. Moreover, budgetary preparedness (BP) was identified as essential for accurate budget management and mitigation of uncertainty's effects, while budgetary governance (BG) significantly impacted corruption reduction, financial accountability, and sustainability.

Further analysis revealed significant positive relationships between these factors, reinforcing their interconnectedness in navigating uncertainty. Notably, budgetary resilience (BR) exhibited strong associations with other factors, emphasizing its pivotal role in shaping budgetary outcomes. However, certain relationships, while generally positive, exhibited nuances, necessitating clear governance strategies amidst budgetary stability and uncertainty. Overall, the study's robust FIT model and road diagram analysis affirmed the importance of these relationships, offering valuable insights for crafting effective financial blueprints to navigate uncertainty in public budget management.

These financial blueprint recommendations prioritize budgetary resilience (BR), ensure budgetary stability (BS) and sustainability (BSu), promote budgetary empowerment (BE), enhance budgetary preparedness (BP), strengthen budgetary governance (BG), address budgetary inclusion priorities (BIP), embrace budgetary agility (BA) and aim to provide a comprehensive framework for navigating uncertainty in public budget management, drawing upon the identified factors and their interrelationships highlighted in the research. By incorporating these principles into financial planning and policy-making processes, governments can better position themselves to thrive amidst uncertain economic conditions and achieve sustainable development goals.

Finally, future studies could explore further the relationships between these factors and develop governance strategies amidst budgetary stability and uncertainty, thus enhancing the effectiveness of financial blueprints in public budget management. Overall, this research has provided a robust foundation for understanding and navigating uncertainty in public budgeting, with implications for policy-making and financial management strategies.

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The author has no conflict of interest to declare.

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APPENDIX

Table A1 presents the descriptive statistics for the variables related to thriving amidst uncertainty through a financial blueprint for the public budget. This analysis includes 1,200 respondents, with non-significant variables excluded from the econometric and structural model.

TABLE A1
Descriptive statistics of variables

Items	Minimum statistic	Maximum statistic	Items	Minimum statistic	Maximum statistic
Nonsig	3.00	5.00	BG1	2.00	5.00
BP1	2.00	5.00	BG2	2.00	5.00
BR1	3.00	5.00	BG3	2.00	5.00
BP2	3.00	5.00	BG4	2.00	5.00
BS1	3.00	5.00	BG5	2.00	5.00
Nonsig	2.00	5.00	Nonsig.	2.00	5.00
BSu1	3.00	5.00	BG6	2.00	5.00
BR2	3.00	5.00	BG7	2.00	5.00
BS2	1.00	5.00	BG8	1.00	6.00
BS3	3.00	5.00	BG9	2.00	6.00
BR3	2.00	5.00	Nonsig.	1.00	7.00
BR4	3.00	5.00	Nonsig.	1.00	3.00
BSu2	3.00	5.00	BIP2	3.00	5.00
BE3	3.00	5.00	BIP3	2.00	5.00
Nonsig.	3.00	5.00	BA1	3.00	5.00
BE1	3.00	5.00	BA2	2.00	5.00
BSu3	3.00	5.00	BIP1	3.00	5.00
BE2	3.00	5.00	Nonsig.	2.00	5.00
BR5	3.00	5.00	BA3	3.00	5.00
Nonsig	3.00	5.00	BA4	3.00	5.00
			BA5	3.00	5.00
			BA6	3.00	5.00

Note: Nonsig. – non significant variable. N = 1,200.
Source: Author's own calculations.

Table A2 presents the results of the Exploratory Factorial Analysis (EFA) reliability analysis, detailing the Cronbach's Alpha values, Kaiser-Meyer-Olkin (KMO) test results, Bartlett's Test, and the variance explained (VE) for 42 variables categorized into eight factors: Budgetary resilience (BR), Budgetary stability (BS), Budgetary sustainability (BSu), Budgetary empowerment (BE), Budgetary preparedness (BP), Budgetary governance (BG), Budgetary inclusion priorities (BIP), and budgetary agile (BA). The survey included 1,200 respondents, with non-significant variables excluded from the econometric and structural models.

TABLE A2

Exploratory factorial analysis (EFA) reliability analysis (Cronbach's Alpha)

Item	Construct	Factor loading λ	KMO and Bartlett's Test	Variance explained (VE) Cronbach's Alpha	Interpretation
	Factor 1 **Budgetary resilience (BR)**				
BR1	Uncertainty is a major challenge for the public budget	0.701	KMO=0.794	VE=58.2% α=0.729	Valid results
BR2	A sustainable public budget protects the economy from negative effects	0.682	χ^2= 1079.483		
BR3	A well-prepared public budget contributes to economic development	0.785	df=10		
BR4	A well-prepared public budget can increase public investment	0.673	Sig.=0.000		
BR5	A well-prepared public budget improves the quality of public services	0.619			
	Factor 2 **Budgetary stability (BS)**				
BS1	A well-prepared public budget contributes to financial stability	0.783	KMO=0.763	VE=64.5% α=0.724	Valid results
BS2	A well-prepared public budget based on a clear financial plan increases citizen confidence	0.846	χ^2= 747.742 df=3		
BS3	A well-prepared public budget helps to manage financial crises	0.778	Sig.=0.000		
	Factor 3 **Budgetary sustainability (BSu)**				
BSu1	A well-prepared budget plan minimizes financial risks	0.798	KMO=0.749	VE=58.9% α=0.750	Valid results
BSu2	A well-prepared public budget helps to reduce public debt	0.767	χ^2= 485.093 df=3		
BSu3	A well-prepared public budget contributes to poverty reduction	0.736	Sig.=0.000		
	Factor 4 **Budgetary empowerment (BE)**				
BE1	Employment opportunities are enhanced by a well-prepared public budget	0.783	KMO=0.725	VE=55.7% α=0.800	Valid results
BE2	Social sustainability can be achieved through a well-prepared public budget	0.767	χ^2= 379.184 df=3		
BE3	A well-prepared public budget improves the transparency of public finances	0.684	Sig.=0.000		

Item	Construct	Factor loading λ	KMO and Bartlett's Test	Variance explained (VE) Cronbach's Alpha	Interpretation
	Factor 5				
	Budgetary preparedness (BP)				
BP1	A clear financial plan is effective in managing the public budget	0.808	KMO=0.700 χ^2= 118.201 df=3 Sig.=0.000	VE=65.3% α=0.769	Valid results
BP2	A well-prepared financial plan can mitigate the effects of budget uncertainty	0.821			
	Factor 6				
	Budgetary governance (BG)				
BG1	A well-prepared public budget helps to reduce corruption	0.683			
BG2	A well-prepared public budget increases the financial accountability of public institutions	0.566			
BG3	A well-prepared public budget increases accountability to citizens	0.645			
BG4	A well-prepared public budget helps to reduce wealth inequality	0.646			
BG5	A well-prepared public budget promotes environmental sustainability	0.703	KMO=0.859 χ^2= 3092.409 df=36 Sig.=0.000	VE=55.3% α=0.837	Valid results
BG6	A well-prepared public budget increases citizen participation in financial decision-making	0.678			
BG7	A well-prepared public budget promotes social justice	0.622			
BG8	A well-prepared public budget reduces income inequality	0.666			
BG9	Mechanisms for monitoring and evaluating the implementation of the public budget are necessary	0.714			
	Factor 7				
	Budgetary inclusion priorities (BIP)				
BIP1	Necessity of public budget allocation for programs promoting gender equality	0.753	KMO=0.733 χ^2= 335.591 df=3 Sig.=0.000	VE=54.7% α=0.786	Valid results
BIP2	The belief that public investment should prioritize long-term economic development	0.715			
BIP3	Public consultation plays a crucial role in the process of public budgeting	0.752			

Item	Construct	Factor loading λ	KMO and Bartlett's Test	Variance explained (VE) Cronbach's Alpha	Interpretation
	Factor 8 **Budgetary agile (BA)**				
BA1	Satisfaction with the frequency of updates on the implementation of the public budget	0.669			
BA2	Satisfaction with the inclusiveness of the public budget in addressing diverse community needs	0.580	KMO=0.823	VE=53.8%	Valid results
BA3	Satisfaction with government responsiveness to public input during the budget process	0.657	χ^2= 1254.973	α=0.742	
BA4	Information about services and programs funded by the public budget is easily accessible	0.711	df=15		
BA5	The government effectively communicates budget decisions to the public	0.658	Sig.=0.000		
BA6	The government can meet future fiscal challenges	0.688			

Note: KMO = Kaiser-Meyer-Olkin, χ^2 = Chi-Square, df = degrees of freedom, *** p<0.001, α = Cronbach's Alpha.
Source: Author's own calculations.

Table A3 presents a comprehensive analysis of demographic factors essential for developing a financial blueprint for the public budget, aimed at fostering resilience amid uncertainty. The findings reveal that a majority of respondents (61.0%) have post-graduate degrees, indicating a well-educated population. Additionally, females make up 65.2% of the respondents, suggesting that gender perspectives may influence budget priorities. Furthermore, the predominant age group is 15-35 years old (70.9%), highlighting a younger demographic that may favor innovative financial strategies. These insights are crucial for tailoring financial approaches to effectively meet the needs of the community.

TABLE A3

Descriptive analysis for respondents

		Frequency	**Percent**
Education	High school	22	1.8
	Basic studies – faculty	382	31.8
	Post-graduate studies – master	732	61.0
	Other (Ph.D.)	64	5.3
	Total	1,200	100.0
Gender	Male	391	32.6
	Female	782	65.2
	Prefer not to answer	27	2.3
	Total	1,200	100.0
Age	15-35 years old	851	70.9
	36-55 years old	266	22.2
	Over 55 years old	83	6.9
	Total	1,200	100.0

Source: Author's own calculations.

Table A4 presents the covariances and correlations among various factors related to thriving amid uncertainty in the context of a financial blueprint for the public budget. These results reveal the relationships between different factors influencing the financial blueprint, showing significant positive correlations among various pairs. This interconnectedness underscores the importance of considering these relationships in budgetary planning and decision-making.

TABLE A4

Covariances and correlations

Path variables	Estimate	Covariances				Correlation	Interpretation
		S.E.	C.R.		P value	Estimate	
BR <--> BE	0.102***	0.008	12.041	***	p < 0.001	0.733	
BR <--> BP	0.070***	0.007	9.855	***	p < 0.001	0.602	
BR <--> BG	0.016**	0.006	2.738	.006	p < 0.01	0.101	
BR <--> BSu	0.099***	0.008	11.927	***	p < 0.001	0.764	
BS <--> BE	0.104***	0.009	11.121	***	p < 0.001	0.589	
BS <--> BIP	0.036***	0.007	5.324	***	p < 0.001	0.249	
BS <--> BP	0.107***	0.009	11.415	***	p < 0.001	0.720	
BS <--> BSu	0.116***	0.010	12.047	***	p < 0.001	0.701	
BE <--> BIP	0.057***	0.007	8.126	***	p < 0.001	0.456	Cov (BR, BS, BSu, BE, BP, BG, BIP, and BA)
BE <--> BP	0.097***	0.009	11.105	***	p < 0.001	0.763	Cor (BR, BS, BSu, BE, BP, BG, BIP, and BA)
BE <--> BG	0.020**	0.007	2.872	.004	p < 0.01	0.117	Positive and significant relationship
BE <--> BSu	0.094***	0.008	11.082	***	p < 0.001	0.670	
BE <--> BA	0.052***	0.007	7.662	***	p < 0.001	0.369	The covariance's of the factors: BP<--> BG and BG <--> BSu
BIP <--> BP	0.033***	0.006	5.381	***	p < 0.001	0.316	are not statistically significant at the 5% level.
BIP <--> BG	0.019**	0.006	3.174	.002	p < 0.01	0.133	
BIP <--> BSu	0.038***	0.006	6.405	***	p < 0.001	0.332	
BP <--> BG	0.010	0.007	1.446	.148	nonsig.	0.067	
BP <--> BSu	0.098***	0.009	11.380	***	p < 0.001	0.827	
BP <--> BA	0.061***	0.007	8.839	***	p < 0.001	0.518	
BG <--> BSu	0.010	0.006	1.549	.121	nonsig.	0.061	
BG <--> BA	0.023***	0.006	3.793	***	p < 0.001	0.142	
BSu <--> BA	0.053***	0.006	8.240	***	p < 0.001	0.405	
BR <--> BS	0.059***	0.007	8.159	***	p < 0.001	0.361	
BS <--> BA	0.040***	0.007	5.852	***	p < 0.001	0.244	

Path variables			Covariances			Correlation	Interpretation
BR <--> BIP	0.048***	0.006	8.025	***	p < 0.001	0.417	
BIP <--> BA	0.097***	0.008	11.466	***	p < 0.001	0.831	
BS <--> BG	0.036***	0.008	4.628	***	p < 0.001	0.176	
BR <--> BA	0.053***	0.006	8.644	***	p < 0.001	0.405	

Note. *** $p<0.001$, ** $p<0.01$, Standard error (S.E.), Critical ratios (C.R.), Covariance's (Cov), Correlations (Cor), C.I. = 95%, nonsig. – not significantly different from zero at the 0.05 level (two-tailed).

Source: Author's own calculations.